Claims

1. Peptide corresponding to a part of the aminoacid sequence of a microbial protein having a conserved mammalian stress protein homologue, wherein the overall aminoacid sequence identity between the microbial and the mammalian homologues is at least 25%, the sequence identity between the microbial and the mammalian homologues of an area of at least 75 consecutive aminoacids is at least 40%, said part comprising 5–30 aminoacids, at least 5 of which are identical with the corresponding aminoacids in the same relative position in a T cell epitope of said stress protein, said epitope and said part containing at least 4 consecutive aminoacids which are identical with the corresponding mammalian stress protein aminoacids.

2. Peptide according to claim 1, wherein the overall ~~aminoacid~~ amino acid sequence identity between the microbial and the mammalian homologues is at least 40% and the sequence identity between the microbial and the mammalian homologues of an area of at least 75 consecutive ~~aminoacids~~ amino acids is at least 50%.

3. Peptide according to claim 1 ~~or 2~~, wherein said stress protein is selected from heat–shock proteins and stress–induced enzymes.

4. Peptide according to claim 3, wherein said heat–shock protein is heat shock protein hsp65 of *Mycobacterium tuberculosis* (identical to hsp65 of *M. bovis* BCG) as depicted in SEQ ID No. 1.

5. Peptide according to claim 4, wherein the peptide comprises at least ~~5~~ 6 ~~aminoacids~~ amino acids which are identical with the corresponding ~~aminoacids~~ amino acids in the same relative position in one of the sequences 81–100 and 241–270 of SEQ ID No. 1.

6. Peptide according to claim 5, wherein the peptide comprises at least ~~5~~ 6 ~~aminoacids~~ amino acids which are identical with the corresponding ~~aminoacids~~ amino acids in the same relative position in one of the sequences 84–95 and 256–265 of SEQ ID No. 1.

7. [– provisionally deleted –]

8. Peptide according to ~~any one of~~ claims ~~1–6~~, wherein said part does not contain one or more sections of ~~5–50~~ aminoacids corresponding to T cell epitopes of said stress protein, which epitopes contain less than 3, especially less than 4, consecutive aminoacids which are identical with the corresponding mammalian stress protein amino-acids.

9. Peptide according to ~~any one of~~ claims 1–8, wherein one or more of the aminoacid residues has been exchanged with a residue of an aminoacid having similar size, charge and polarity, or with aminoacid mimetics resulting in one or more backbone modifications.

~~10.~~ Method of producing a peptide according to ~~any one of~~ claims 1–~~9~~, comprising the steps of:

a) selecting a microbial protein having a conserved mammalian stress protein homologue, wherein the overall aminoacid sequence identity between the microbial and the mammalian homologues is at least 25%, and the sequence identity between the microbial and the mammalian homologues of an area of at least 75 consecutive aminoacids is at least 40%;

b) preparing peptides comprising 5–30 aminoacids at least 5 of which are identical with the corresponding aminoacids in the same relative position in said stress protein, of which a series of at least 4 consecutive aminoacids is identical both to a series of aminoacids of the selected microbial protein and to the corresponding series of mammalian stress protein aminoacids;

c) screening the prepared peptides for the presence of a T cell epitope.

~~11.~~ Nucleotide sequence encoding a peptide according to ~~any one of~~ claims 1–~~8~~.

~~12.~~ Expression system capable of expressing a peptide according to any ~~one of~~ claims 1–~~8~~.

~~13.~~ Microorganism or eukaryotic cell containing an expression system according to claim ~~12~~.

~~14.~~ T cell or cell expressing a T cell receptor from it, activated by immuno-stimulation using a peptide according to ~~any one of~~ claims ~~1-9~~.

~~15.~~ Antibody raised against a peptide according to ~~any one of~~ claims ~~1-9~~.

~~16.~~ Pharmaceutical composition suitable for treatment of or protection against an inflammatory disease, including autoimmune diseases, such as diabetes, arthritic diseases, atherosclerosis, multiple sclerosis, myasthenia gravis, containing a peptide according to any one of claims 1-9, a nucleotide sequence according to claim 11, an expression system according to claim 12, a cell according to claim 13 or 14, or an antibody according to claim 15.

~~17.~~ Diagnostic composition suitable for detecting an inflammatory disease, including autoimmune diseases, containing a peptide according to any one of claims 1-9 or an antibody according to claim 15.